



ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY CLASS I PERMIT

COMPANY: *UniSource Energy Development Company*
FACILITY: *Black Mountain Generating Station*
PERMIT #: *42864*
DATE ISSUED: *Draft*
EXPIRY DATE:

SUMMARY

This operating permit is issued to UniSource Energy Development Company, the Permittee, for the operation of a peaking power plant identified as the Black Mountain Generating Station (BMGS). The facility will be located approximately ½ mile east of the UNS Electric's Sacramento substation, and approximately 10 miles southeast of the town of Kingman, Arizona and 1.5 miles west of Interstate 40 in Mohave County, Arizona. The site location is in an area designated as attainment/unclassifiable for all criteria pollutants.

BMGS is being installed to increase the reliability of the areas electrical distribution system by supplying peaking power, backup power and voltage stabilization for the UniSource Energy Development Company Mohave County service area. The principal equipment at BMGS will be two simple cycle combustion turbine generators (Gas Turbine Units 1 and 2), each with a design capacity of approximately 48 MW, for a total combined plant capability of approximately 96 MW. Gas Turbine Units 1 & 2 will be fired exclusively on natural gas and will use water injection systems to control nitrogen oxide (NO_x) emissions. BMGS will include electrical generation and ancillary equipment, a black start generator, a cooling tower, a wastewater evaporation pond, access and plant roads, office and control facilities, a substation and associated distribution lines, warehouses for electric service and gas service building and an outside storage area for transformers and equipment.

BMGS is classified as a Class I Major Source pursuant to A.A.C. R18-2-101.64. Potential emissions of nitrogen oxides (NO_x) and carbon monoxide (CO) each exceed 100 tons per year. By voluntary restriction, total allowable NO_x and CO emissions are limited by enforceable permit conditions to stay below 250 tons per year each. Therefore, BMGS does not constitute a major source as defined under A.A.C. R18-2-401 for the purposes of Prevention of Significant Deterioration (PSD) [Title I, Part C of the Clean Air Act (CAA) and A.A.C. R18-2-406]. BMGS is a minor source of hazardous air pollutants (HAP) for the purposes of CAA Section 112 and Article 11 of A.A.C. R18-2. Potential emissions of individual and total combined HAP are less than 10 and 25 tons per year, respectively.

Continuous emissions monitoring systems (CEMS), fuel flow monitoring, and data acquisition and handling systems (DAHS) will be utilized to demonstrate compliance with applicable NO_x and CO emission limitations for Gas Turbine Units 1 & 2, including New Source Performance Standards (NSPS) Subpart GG (NO_x) and synthetic minor limitations (NO_x and CO).

This permit is issued in accordance with Title 49, Chapter 3 of the Arizona Revised Statutes. All definitions, terms, and conditions used in this permit conform to those in the Arizona Administrative Code (A.A.C.) R18-2-101 et. seq. and Title 40, Code of Federal Regulations (CFR), except as otherwise defined in this permit. Unless noted otherwise, references cited in the permit conditions refer to the A.A.C. All material permit conditions have been identified within the permit by underline and italics. All terms and conditions in this permit are enforceable by the Administrator of the United States Environmental Protection Agency (U.S. EPA), except for those terms and conditions that have been designated as "State requirements."

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ATTACHMENT “A”: GENERAL PROVISIONS

Air Quality Control Permit No. 42864 for UniSource Energy Development Company – Black Mountain Generating Station

- I. PERMIT EXPIRATION AND RENEWAL** [ARS § 49-426.F, A.A.C. R18-2-304.C.2, and -306.A.1]
- A.** This permit is valid for a period of five years from the date of issuance.
- B.** The Permittee shall submit an application for renewal of this permit at least 6 months, but not more than 18 months, prior to the date of permit expiration.
- II. COMPLIANCE WITH PERMIT CONDITIONS** [A.A.C. R18-2-306.A.8.a and b]
- A.** The Permittee shall comply with all conditions of this permit including all applicable requirements of the Arizona air quality statutes and air quality rules. Any permit noncompliance constitutes a violation of the Arizona Revised Statutes and is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application. In addition, noncompliance with any federally enforceable requirement constitutes a violation of the Clean Air Act.
- B.** It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- III. PERMIT REVISION, REOPENING, REVOCATION AND REISSUANCE, OR TERMINATION FOR CAUSE** [A.A.C. R18-2-306.A.8.c, -321.A.1, and -321.A.2]
- A.** The permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
- B.** The permit shall be reopened and revised under any of the following circumstances
1. Additional applicable requirements under the Clean Air Act become applicable to the Class I source. Such a reopening shall only occur if there are three or more years remaining in the permit term. The reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless an application for renewal has been submitted pursuant to A.A.C. R18-2-322.B. Any permit revision required pursuant to this subparagraph shall comply with the provisions in A.A.C. R18-2-322 for permit renewal and shall reset the five-year permit term.
 2. Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the Class I permit.
 3. The Director or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

4. The Director or the Administrator determines that the permit needs to be revised or revoked to assure compliance with the applicable requirements.
- C. Proceedings to reopen and reissue a permit, including appeal of any final action relating to a permit reopening, shall follow the same procedures as apply to initial permit issuance and shall, except for reopenings under Condition III.B.1 above, affect only those parts of the permit for which cause to reopen exists. Such reopenings shall be made as expeditiously as practicable. Permit reopenings for reasons other than those stated in Condition III.B.1 above shall not result in a resetting of the five-year permit term.

IV. POSTING OF PERMIT

[A.A.C. R18-2-315]

- A. The Permittee shall post this permit or a certificate of permit issuance where the facility is located in such a manner as to be clearly visible and accessible. All equipment covered by this permit shall be clearly marked with one of the following:
 1. Current permit number; or
 2. Serial number or other equipment ID number that is also listed in the permit to identify that piece of equipment.
- B. A copy of the complete permit shall be kept on site.

V. FEE PAYMENT

[A.A.C. R18-2-306.A.9 and -326]

The Permittee shall pay fees to the Director pursuant to ARS § 49-426(E) and A.A.C. R18-2-326.

VI. ANNUAL EMISSION INVENTORY QUESTIONNAIRE

[A.A.C. R18-2-327.A and B]

- A. The Permittee shall complete and submit to the Director an annual emissions inventory questionnaire. The questionnaire is due by March 31st or ninety days after the Director makes the inventory form available each year, whichever occurs later, and shall include emission information for the previous calendar year.
- B. The questionnaire shall be on a form provided by the Director and shall include the information required by A.A.C. R18-2-327.

VII. COMPLIANCE CERTIFICATION

[A.A.C. R18-2-309.2.a, -309.2.c-d, and -309.5.d]

- A. The Permittee shall submit a compliance certification to the Director semiannually, which describes the compliance status of the source with respect to each permit condition. The first certification shall be submitted no later than May 15th, and shall report the compliance status of the source during the period between October 1st of the previous year and March 31st of the current year. The second certification shall be submitted no later than November 15th, and shall report the compliance status of the source during the period between April 1st and September 30th of the current year.

The compliance certifications shall include the following:

1. Identification of each term or condition of the permit that is the basis of the certification;
2. Identification of the methods or other means used by the Permittee for determining the compliance status with each term and condition during the certification period,

3. The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the methods or means designated in Condition VII.A.2 above. The certifications shall identify each deviation and take it into account for consideration in the compliance certification;
 4. For emission units subject to 40 CFR Part 64, the certification shall also identify as possible exceptions to compliance any period during which compliance is required and in which an excursion or exceedance defined under 40 CFR Part 64 occurred;
 5. All instances of deviations from permit requirements reported pursuant to Condition XII.B of this Attachment; and
 6. Other facts the Director may require to determine the compliance status of the source.
- B.** A copy of all compliance certifications shall also be submitted to the EPA Administrator.
- C.** If any outstanding compliance schedule exists, a progress report shall be submitted with the semi-annual compliance certifications required in Condition VII.A above.

VIII. CERTIFICATION OF TRUTH, ACCURACY AND COMPLETENESS

[A.A.C. R18-2-304.H]

Any document required to be submitted by this permit, including reports, shall contain a certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

IX. INSPECTION AND ENTRY

[A.A.C. R18-2-309.4]

Upon presentation of proper credentials, the Permittee shall allow the Director or the authorized representative of the Director to:

- A.** Enter upon the Permittee's premises where a source is located, emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;
- B.** Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;
- C.** Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;
- D.** Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and
- E.** Record any inspection by use of written, electronic, magnetic and photographic media.

X. PERMIT REVISION PURSUANT TO FEDERAL HAZARDOUS AIR POLLUTANT STANDARD

[A.A.C. R18-2-304.C]

If this source becomes subject to a standard promulgated by the Administrator pursuant to Section 112(d) of the Act, then the Permittee shall, within twelve months of the date on which the standard is promulgated, submit an application for a permit revision demonstrating how the source will comply with the standard.

XI. ACCIDENTAL RELEASE PROGRAM

[40 CFR Part 68]

If this source becomes subject to the provisions of 40 CFR Part 68, then the Permittee shall comply with these provisions according to the time line specified in 40 CFR Part 68.

XII. EXCESS EMISSIONS, PERMIT DEVIATIONS, AND EMERGENCY REPORTING

A. Excess Emissions Reporting

[A.A.C. R18-2-310.01.A and -310.01.B]

1. Excess emissions shall be reported as follows:

a. The Permittee shall report to the Director any emissions in excess of the limits established by this permit. Such report shall be in two parts as specified below:

- (1) Notification by telephone or facsimile within 24 hours of the time when the Permittee first learned of the occurrence of excess emissions including all available information from Condition XII.A.1.b below.**
- (2) Detailed written notification by submission of an excess emissions report within 72 hours of the notification pursuant to Condition XII.A.1.a.(1) above.**

b. The report shall contain the following information:

- (1) Identity of each stack or other emission point where the excess emissions occurred;**
- (2) Magnitude of the excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;**
- (3) Date, time and duration, or expected duration, of the excess emissions;**
- (4) Identity of the equipment from which the excess emissions emanated;**
- (5) Nature and cause of such emissions;**
- (6) If the excess emissions were the result of a malfunction, steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunctions; and**
- (7) Steps taken to limit the excess emissions. If the excess emissions resulted from start-up or malfunction, the report shall contain a list of the steps taken to comply with the permit procedures.**

2. In the case of continuous or recurring excess emissions, the notification requirements of this section shall be satisfied if the source provides the required notification after excess emissions are first detected and includes in such notification an estimate of the time the excess emissions will continue. Excess emissions occurring after the estimated time period, or changes in the nature of the emissions as originally reported, shall require additional notification pursuant to Condition XII.A.1 above.

[A.A.C. R18-2-310.01.C]

B. Permit Deviations Reporting

[A.A.C. R18-2-306.A.5.b]

The Permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. Prompt reporting shall mean that the report was submitted to the Director by certified mail, facsimile, or hand delivery within two working days of the time when emission limitations were exceeded due to an emergency or within two working days of the time when the owner or operator first learned of the occurrence of a deviation from a permit requirement.

C. Emergency Provision

[A.A.C. R18-2-306.E]

1. An “emergency” means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, that require immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.
2. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if Condition XII.C.3 is met.
3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - a. An emergency occurred and that the Permittee can identify the cause(s) of the emergency;
 - b. The permitted facility was being properly operated at the time;
 - c. During the period of the emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
 - d. The Permittee submitted notice of the emergency to the Director by certified mail, facsimile, or hand delivery within two working days of the time when emission limitations were exceeded due to the emergency. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.
4. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
5. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

D. Compliance Schedule

[ARS § 49-426.I.5]

For any excess emission or permit deviation that cannot be corrected within 72 hours, the Permittee is required to submit a compliance schedule to the Director within 21 days of such occurrence. The compliance schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with the permit terms or conditions that have been violated.

E. Affirmative Defenses for Excess Emissions Due to Malfunctions, Startup, and Shutdown

[A.A.C. R18-2-310]

1. Applicability

This rule establishes affirmative defenses for certain emissions in excess of an emission standard or limitation and applies to all emission standards or limitations except for standards or limitations:

- a. Promulgated pursuant to Sections 111 or 112 of the Act;
- b. Promulgated pursuant to Titles IV or VI of the Clean Air Act;
- c. Contained in any Prevention of Significant Deterioration (PSD) or New Source Review (NSR) permit issued by the U.S. EPA;
- d. Contained in A.A.C. R18-2-715.F; or
- e. Included in a permit to meet the requirements of A.A.C. R18-2-406.A.5.

2. Affirmative Defense for Malfunctions

Emissions in excess of an applicable emission limitation due to malfunction shall constitute a violation. When emissions in excess of an applicable emission limitation are due to a malfunction, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:

- a. The excess emissions resulted from a sudden and unavoidable breakdown of process equipment or air pollution control equipment beyond the reasonable control of the Permittee;
- b. The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
- c. If repairs were required, the repairs were made in an expeditious fashion when the applicable emission limitations were being exceeded. Off-shift labor and overtime were utilized where practicable to ensure that the repairs were made as expeditiously as possible. If off-shift labor and overtime were not utilized, the Permittee satisfactorily demonstrated that the measures were impracticable;
- d. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;
- e. All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
- f. The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;

- g. During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;
- h. The excess emissions did not stem from any activity or event that could have been foreseen and avoided, or planned, and could not have been avoided by better operations and maintenance practices;
- i. All emissions monitoring systems were kept in operation if at all practicable; and
- j. The Permittee's actions in response to the excess emissions were documented by contemporaneous records

3. Affirmative Defense for Startup and Shutdown

- a. Except as provided in Condition XII.E.3.b below, and unless otherwise provided for in the applicable requirement, emissions in excess of an applicable emission limitation due to startup and shutdown shall constitute a violation. When emissions in excess of an applicable emission limitation are due to startup and shutdown, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:
 - (1) The excess emissions could not have been prevented through careful and prudent planning and design;
 - (2) If the excess emissions were the result of a bypass of control equipment, the bypass was unavoidable to prevent loss of life, personal injury, or severe damage to air pollution control equipment, production equipment, or other property;
 - (3) The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
 - (4) The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;
 - (5) All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
 - (6) During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;
 - (7) All emissions monitoring systems were kept in operation if at all practicable; and
 - (8) Contemporaneous records documented the Permittee's actions in response to the excess emissions.

- b. If excess emissions occur due to a malfunction during routine startup and shutdown, then those instances shall be treated as other malfunctions subject to Condition XII.E.2 above.
4. Affirmative Defense for Malfunctions during Scheduled Maintenance

If excess emissions occur due to a malfunction during scheduled maintenance, then those instances will be treated as other malfunctions subject to Condition XII.E.2 above.
5. Demonstration of Reasonable and Practicable Measures

For an affirmative defense under Condition XII.E.2 or XII.E.3 above, the Permittee shall demonstrate, through submission of the data and information required by Condition XII.E and A.A.C. R18-2-310.01, that all reasonable and practicable measures within the Permittee's control were implemented to prevent the occurrence of the excess emissions.

XIII. RECORD KEEPING REQUIREMENTS

[A.A.C. R18-2-306.A.4]

- A. The Permittee shall keep records of all required monitoring information including, but not limited to, the following:
 1. The date, place as defined in the permit, and time of sampling or measurements;
 2. The date(s) analyses were performed;
 3. The name of the company or entity that performed the analyses;
 4. A description of the analytical techniques or methods used;
 5. The results of such analyses; and
 6. The operating conditions as existing at the time of sampling or measurement.
- B. The Permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings or other data recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.
- C. All required records shall be maintained either in an unchangeable electronic format or in a handwritten logbook utilizing indelible ink.

XIV. REPORTING REQUIREMENTS

[A.A.C. R18-2-306.A.5.a]

The Permittee shall submit the following reports:

- A. Compliance certifications in accordance with Section VII of Attachment "A".
- B. Excess emission; permit deviation, and emergency reports in accordance with Section XII of Attachment "A".
- C. Other reports required by any condition of Attachment "B".

XV. DUTY TO PROVIDE INFORMATION

[A.A.C. R18-2-304.G and -306.A.8.e]

- A.** The Permittee shall furnish to the Director, within a reasonable time, any information that the Director may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the Director copies of records required to be kept by the permit. For information claimed to be confidential, the Permittee shall furnish an additional copy of such records directly to the Administrator along with a claim of confidentiality.
- B.** If the Permittee has failed to submit any relevant facts or has submitted incorrect information in the permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.

XVI. PERMIT AMENDMENT OR REVISION

[A.A.C. R18-2-318, -319, and -320]

The Permittee shall apply for a permit amendment or revision for changes to the facility which do not qualify for a facility change without revision under Section XVII, as follows:

- A.** Administrative Permit Amendment (A.A.C. R18-2-318);
- B.** Minor Permit Revision (A.A.C. R18-2-319); and
- C.** Significant Permit Revision (A.A.C. R18-2-320)

The applicability and requirements for such action are defined in the above referenced regulations.

XVII. FACILITY CHANGE WITHOUT A PERMIT REVISION

[A.A.C. R18-2-306.A.4 and -317]

- A.** The Permittee may make changes at the permitted source without a permit revision if all of the following apply:
 - 1. The changes are not modifications under any provision of Title I of the Act or under ARS § 49-401.01(19);
 - 2. The changes do not exceed the emissions allowable under the permit whether expressed therein as a rate of emissions or in terms of total emissions;
 - 3. The changes do not violate any applicable requirements or trigger any additional applicable requirements;
 - 4. The changes satisfy all requirements for a minor permit revision under A.A.C.-R18-2-319.A; and
 - 5. The changes do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), record keeping, reporting, or compliance certification requirements.
- B.** The substitution of an item of process or pollution control equipment for an identical or substantially similar item of process or pollution control equipment shall qualify as a change that does not require a permit revision, if it meets all of the requirements of Conditions XVII.A and XVII.C of this Attachment.
- C.** For each change under Conditions XVII.A and XVII.B above, a written notice by certified mail or hand delivery shall be received by the Director and the Administrator a minimum of 7 working

days in advance of the change. Notifications of changes associated with emergency conditions, such as malfunctions necessitating the replacement of equipment, may be provided less than 7 working days in advance of the change, but must be provided as far in advance of the change; as possible or, if advance notification is not practicable, as soon after the change as possible.

D. Each notification shall include:

1. When the proposed change will occur;
2. A description of the change;
3. Any change in emissions of regulated air pollutants; and
4. Any permit term or condition that is no longer applicable as a result of the change.

E. The permit shield described in A.A.C. R18-2-325 shall not apply to any change made under this Section, other than implementation of an alternate to Conditions XVII.A and XVII.B above.

F. Except as otherwise provided for in the permit, making a change from one alternative operating scenario to another as provided under A.A.C. R18-2-306.A.11 shall not require any prior notice under this Section.

G. Notwithstanding any other part of this Section, the Director may require a permit to be revised for any change that, when considered together with any other changes submitted by the same source under this Section over the term of the permit, do not satisfy Condition XVII.A above.

XVIII. TESTING REQUIREMENTS

[A.A.C. R18-2-312]

A. The Permittee shall conduct performance tests as specified in the permit and at such other times as may be required by the Director.

B. Operational Conditions during Testing

Tests shall be conducted during operation at the maximum possible capacity of each unit under representative operational conditions unless other conditions are required by the applicable test method or in this permit. With prior written approval from the Director, testing may be performed at a lower rate. Operations during periods of start-up, shutdown, and malfunction (as defined in A.A.C. R18-2-101) shall not constitute representative operational conditions unless otherwise specified in the applicable standard.

C. Tests shall be conducted and data reduced in accordance with the test methods and procedures contained in the Arizona Testing Manual unless modified by the Director pursuant to A.A.C. R18-2-312.B.

D. Test Plan

At least 14 calendar days prior to performing a test, the Permittee shall submit a test plan to the Director in accordance with A.A.C. R18-2-312.B and the Arizona Testing Manual. This test plan must include the following:

1. Test duration;
2. Test location(s);

3. Test method(s); and
4. Source operation and other parameters that may affect test results.

E. Stack Sampling Facilities

The Permittee shall provide, or cause to be provided, performance testing facilities as follows:

1. Sampling ports adequate for test methods applicable to the facility;
2. Safe sampling platform(s);
3. Safe access to sampling platform(s); and
4. Utilities for sampling and testing equipment.

F. Interpretation of Final Results

Each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic mean of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs is required to be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control, compliance may, upon the Director's approval, be determined using the arithmetic mean of the results of the other two runs. If the Director or the Director's designee is present, tests may only be stopped with the Director's or such designee's approval. If the Director or the Director's designee is not present, tests may only be stopped for good cause. Good cause includes: forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control. Termination of any test without good cause after the first run is commenced shall constitute a failure of the test. Supporting documentation, which demonstrates good cause, must be submitted.

G. Report of Final Test Results

A written report of the results of all performance tests shall be submitted to the Director within 30 days after the test is performed. The report shall be submitted in accordance with the Arizona Testing Manual and A.A.C. R18-2-312.A.

XIX. PROPERTY RIGHTS

[A.A.C. R18-2-306.A.8.d]

This permit does not convey any property rights of any sort, or any exclusive privilege.

XX. SEVERABILITY CLAUSE

[A.A.C. R18-2-306.A.7]

The provisions of this permit are severable. In the event of a challenge to any portion of this permit, or if any portion of this permit is held invalid, the remaining permit conditions remain valid and in force.

XXI. PERMIT SHIELD

[A.A.C. R18-2-325]

Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements identified in the portions of this permit subtitled "Permit Shield". The permit shield shall

not apply to minor revisions pursuant to Condition XVI.B of this Attachment and any facility changes without a permit revision pursuant to Section XVII of this Attachment.

XXII. PROTECTION OF STRATOSPHERIC OZONE

[40 CFR Part 82]

If this source becomes subject to the provisions of 40 CFR Part 82, then the Permittee shall comply with these provisions accordingly.

ATTACHMENT “B”: SPECIFIC CONDITIONS

Air Quality Control Permit No. 42864 for UniSource Energy Development Company – Black Mountain Generating Station

I. RELATIONSHIP OF PERMIT TO APPLICABLE STATE IMPLEMENTATION PLAN

[ARS § 49-404.c and -426]

This permit is issued pursuant to the provisions of the Arizona Revised Statutes (ARS) and constitutes an Installation Permit for the purpose of the applicable State Implementation Plan.

II. FACILITY WIDE REQUIREMENTS

- A. At the time the compliance certification required by Section VII of Attachment “A” are submitted, the Permittee shall submit reports of all monitoring activities required by this Attachment performed in the same six month period as applies to the compliance certification period.
[A.A.C. R18-2-306.A.5.a]
- B. The Permittee shall keep a log of all emission related maintenance activities performed at the facility.
[A.A.C. R18-2-306.A.3.c.]

III. GAS TURBINE UNITS 1 & 2

A. Applicability

This section applies to the two simple cycle combustion gas turbine units, Gas Turbine Unit 1 and Gas Turbine Unit 2.

B. General Provisions

The following requirements apply to the operation, maintenance, recordkeeping and testing of Gas Turbine Units 1 and 2 and associated monitoring systems in accordance with 40 CFR Part 60, Subpart A – General Provisions.

- 1. All requests, reports, applications, submittals, and other communications to the Director pursuant to A.A.C. R18-2-901, -902, and 40 CFR Part 60 shall be submitted in duplicate to the EPA Region 9 office at the following addresses:

Director, Air Division (Attn: AIR-1)
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105
[A.A.C. R18-2-901, -902 {40 CFR 60.4(a)}]
- 2. The Permittee shall comply with the general notification requirements contained in 40 CFR 60.7(a), including but not limited to: [A.A.C. R18-2-901(1) {40 CFR 60.7(a)}]
 - a. Notification of the date of construction of each affected facility postmarked no later than 30 days after such date.
 - b. Notification of the actual date of initial startup of each affected facility postmarked within 15 days after such date.

- c. Notification of the date upon which demonstration of the continuous monitoring system performance commences in accordance with 40 CFR 60.13(c) post-marked not less than 30 days prior to such date.
3. The Permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. [A.A.C. R18-2-901(1) {40 CFR 60.7(b)}]
4. The Permittee shall submit excess emissions and monitoring systems performance reports and/or summary report form on a semi-annual basis as required by 40 CFR 60.7(c) and (d). [A.A.C. R18-2-901(1), {40 CFR 60.7(c), 60.7(d)}]
5. The Permittee shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records, except as provided in 40 CFR 60.7(f)(1) and (2). [A.A.C. R18-2-901(1), {40 CFR 60.7(f)}]
6. *At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate Gas Turbine Unit 1 and Gas Turbine Unit 2 including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.* Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.
[A.A.C. R18-2-901(1), {40 CFR 60.11(d)}, A.A.C. R18-2-331.A.3.e]
[Material permit conditions are indicated by underline and italics]
7. For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any standard in 40 CFR Part 60, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed. [A.A.C. R18-2-901(1), {40 CFR 60.11(g)}]
8. The Permittee shall not build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission, which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with opacity standard or with a standard, which is based on the concentration of a pollutant in the gases discharged to the atmosphere. [A.A.C. R18-2-901(1), {40 CFR 60.12}]
9. The Permittee shall comply with the "General Notification and Reporting Requirements" found in 40 CFR 60.19. [A.A.C. R18-2-901(1), {40 CFR 60.19}]

C. Operational Limitations

Fuel Limitation

The Permittee shall not cause or allow the combustion of any fuel in Gas Turbine Unit 1 or Gas Turbine Unit 2 other than pipeline quality natural gas meeting the definition of "natural gas" in 40 CFR 60.331(u). [A.A.C. R18-2-901(40) {40 CFR 60.334(h)(3)}; A.A.C. R18-2-306.01, -306.A.2, -331.A.3.a]

[Material permit conditions are indicated by underline and italics]

D. Nitrogen Oxides

1. Emission Limitations/Standards

- a. The Permittee shall not cause to be discharged into the atmosphere from Gas Turbine Unit 1 or Gas Turbine Unit 2 any gases which contain nitrogen oxides (NO_x) in excess of:

$$STD = 0.0075 \frac{(14.4)}{Y} + F$$

Where:

STD = allowable ISO corrected (if required as given in 40 CFR 60.335(b)(1)) NO_x emission concentration (percent by volume at 15 percent oxygen and on a dry basis),

Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour, and

F = NO_x emission allowance for fuel-bound nitrogen = 0.

For Gas Turbine Units 1 & 2, STD = 75 ppmv at 15% oxygen.

[A.A.C. R18-2-901(40), 40 CFR 60.332(a)(1), 60.332(b)]

- b. Total combined emissions of NO_x from Gas Turbine Unit 1 and Gas Turbine Unit 2 shall not exceed 244 tons per year, calculated daily as a rolling 365-day total.

[A.A.C. R18-2-306.01, -306.02, -331.A.3.a]

[Material permit conditions are indicated by underline and italics]

2. Air Pollution Control Equipment

At all times when Gas Turbine Unit 1 and/or Gas Turbine Unit 2 are in operation, including during startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate the water injection systems in a manner consistent with good air pollution control practices for minimizing NO_x emissions.

[A.A.C. R18-2-901(1) {40 CFR 60.11(d)}, A.A.C. R18-2-331.A.3.e]

[Material permit conditions are indicated by underline and italics]

3. Monitoring, Recordkeeping, and Reporting Requirements

- a. The Permittee shall install, certify, maintain, operate and quality-assure Continuous Emission Monitoring Systems (CEMS) consisting of NO_x and O₂ (or

CO₂) monitors for measuring NO_x emissions from Gas Turbine Unit 1 and Gas Turbine Unit 2.

[A.A.C. R18-2-901(40) {40 CFR 60.334(b)}, A.A.C. R18-2-306.02.C, -306.A.3, -331.A.3.c]
[Material permit conditions are indicated by underline and italics]

- b. For the NO_x and O₂ or CO₂ diluent CEMS, the Permittee shall meet all applicable requirements of 40 CFR Part 75, including but not limited to:

[A.A.C. R18-2-901(40) {40 CFR 60.334(b)(3)(iii)}, A.A.C. R18-2-306.02.C, -306.A.3]

- (1) 75.10 – General Monitoring Requirements;
- (2) 75.12 – Specific Provisions for Monitoring NO_x Emission Rate;
- (3) Subpart C – Operation and Maintenance Requirements;
- (4) Subpart D – Missing Data Substitution Procedures;
- (5) Subpart F – Recordkeeping Requirements;
- (6) Subpart G – Reporting Requirements;
- (7) Appendix A – Specifications and Test Procedures;
- (8) Appendix B – Quality Assurance and Quality Control Procedures;
- (9) Appendix C – Missing Data Estimation Procedures; and
- (10) Appendix F – Conversion Procedures.

- c. As specified in 40 CFR 60.13(e)(2), during each full unit operating hour, each monitor must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour, to validate the hour. For partial unit operating hours, at least one valid data point must be obtained for each quadrant of the hour in which the unit operates. For unit operating hours in which required quality assurance and maintenance activities are performed on the CEMS, a minimum of two valid data points (one in each of two quadrants) are required to validate the hour.

[A.A.C. R18-2-901(40) {40 CFR 60.334(b)(2)}]

- d. For purposes of identifying excess emissions associated with Condition III.D.1.a, CEMS data must be reduced to hourly averages as specified in 40 CFR 60.13(h).

[A.A.C. R18-2-901(40) {40 CFR 60.334(b)(3)}]

- (1) For each unit operating hour in which a valid hourly average, as described in Condition III.D.3.c, is obtained for both NO_x and diluent, the data acquisition and handling system must calculate and record the hourly NO_x emissions in the units of the applicable NO_x emission standard under Condition III.D.1.a, i.e., percent NO_x by volume, dry basis, corrected to 15 percent O₂ and International Organization for Standardization (ISO) standard conditions. For any hour in which the hourly average O₂ concentration exceeds 19.0 percent O₂, a diluent cap value of 19.0 percent O₂ may be used in the emission calculations.

- (2) A worst case ISO correction factor may be calculated and applied using historical ambient data in accordance with the procedures in 40 CFR 60.334(b)(3)(ii).
- e. The missing data substitution methodology provided for at 40 CFR Part 75, subpart D, is not required for purposes of identifying excess emissions associated with Condition III.D.1.a. Instead, periods of missing CEMS data are to be reported as monitor downtime in the excess emissions and monitoring performance report required in 40 CFR 60.7(c).
[A.A.C. R18-2-901(40) {40 CFR 60.334(b)(3)(iii)}]
- f. The Permittee shall submit reports of excess emissions and monitor downtime, in accordance with 40 CFR 60.7(c). Excess emissions shall be reported for all periods of Gas Turbine Unit 1 and Gas Turbine Unit 2 operation, including startup, shutdown and malfunction. Periods of excess emissions and monitor downtime that shall be reported are defined as follows:
- (1) An hour of excess emissions shall be any unit operating hour in which the 4-hour rolling average NO_x concentration exceeds the applicable emission limit in Condition III.D.1.a. A “4-hour rolling average NO_x concentration” is the arithmetic average of the average NO_x concentration measured by the CEMS for a given hour (corrected to 15 percent O₂ and to ISO standard conditions) and the three unit operating hour average NO_x concentrations immediately preceding that unit operating hour.
- (2) A period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour, for either NO_x concentration or diluent (or both).
- (3) Each report shall include the ambient conditions (temperature, pressure, and humidity) at the time of the excess emission period. The Permittee is not required to report ambient conditions if opting to use the worst case ISO correction factor as specified in 40 CFR 60.334(b)(3)(ii).
[A.A.C. R18-2-901(40) {40 CFR 60.334(j) & (j)(1)(iii)}]
- g. All reports required under 40 CFR 60.7(c) shall be postmarked by the 30th day following the end of each 6-month period.
[A.A.C. R18-2-901(40) {40 CFR 60.334(j)(5)}]
- h. The Permittee shall install, calibrate, maintain, and operate fuel flow rate monitoring systems for determining the natural gas input rate to Gas Turbine Unit 1 and Gas Turbine Unit 2 for each operating hour. Each fuel flow rate monitoring system shall be calibrated and quality assured in accordance with the applicable requirements of 40 CFR Part 75 Appendix D.
[A.A.C. R18-2-306.02.C, 306.A.3, -331.A.3.c]
[Material permit conditions are indicated by underline and italics]
- i. The Permittee shall determine and record the gross caloric value (GCV) of the pipeline quality natural gas at least once per month in accordance with the procedures in Section 2.3.4.1 or 2.3.4.2 of 40 CFR 75 Appendix D, as applicable.
[A.A.C. R18-2-306.02.C, 306.A.3]

- j. For demonstrating compliance with Condition III.D.1.b, the Permittee shall utilize the NO_x and diluent CEMS required by Condition III.D.3.a in conjunction with the fuel flow rate monitoring systems required by Condition III.D.3.h and a Data Acquisition and Handling System (DAHS) to calculate mass emissions in units of pounds per million Btu (lb/MMBtu), pounds per hour (lb/hr), pounds per day, and tons per daily rolling 365-day total from Gas Turbine Unit 1 and Gas Turbine Unit 2. [A.A.C. R18-2-306.02.C, -306.A.3]
- (1) To calculate mass emissions in lb/MMBtu, the Permittee shall use the Procedures for NO_x Emission Rate in 40 CFR 75 Appendix F.
- (2) The Permittee shall calculate mass emissions in lb/hr using the calculated lb/MMBtu rates, fuel flow monitoring data, and the GCV of the pipeline quality natural gas in accordance with the procedures for SO₂ emissions contained in 40 CFR 75 Appendix D.
- k. During CEMS or fuel flow rate monitoring system downtime, the Permittee shall implement the missing data procedures in 40 CFR Part 75 Subpart D, Appendix C, and Appendix D, as applicable. [A.A.C. R18-2-306.02.C, 306.A.3]
- l. Each calendar day during which total combined rolling 365-day total NO_x emission rate from Gas Turbine Unit 1 and Gas Turbine Unit 2 exceeds 244 tons shall constitute an exceedance of Condition III.D.1.b. Exceedances shall be reported to the Director in accordance with Condition XII.A of Attachment "A". [A.A.C. R18-2-306.02.C]
- m. Each individual day and 365-day rolling total NO_x emission rate in the reporting period shall be included in the semiannual compliance certification required by Condition VII of Attachment "A". [A.A.C. R18-2-306.02.C, -306.A.5]

4. Performance Testing Requirements

[A.A.C. R18-2-901(1) {40 CFR 60.8}, A.A.C. R18-2-901(40) {40 CFR 60.335}]

- a. The Permittee shall perform an initial performance test for NO_x emissions from Gas Turbine Unit 1 and Gas Turbine Unit 2 to demonstrate compliance with the emission limit contained in Condition III.D.1.a. The initial performance test shall be completed within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after initial startup. Performance tests shall be conducted in accordance with 40 CFR 60.8 and the test methods and procedures in 40 CFR 60.335.
- b. The performance evaluation of the NO_x and diluent CEMS may either be conducted separately or as part of the initial performance test.
- c. The Permittee shall provide at least 30 days prior notice of any performance test in accordance with 40 CFR 60.8(d) and shall furnish the Director a written report of the results of such performance test(s).

5. Permit Shield

[A.A.C. R18-2-325]

Compliance with the conditions of this Part shall be deemed compliance with the following requirements as of the date of issuance of this permit: 40 CFR 60.332(a)(1), 40 CFR 60.332(b), 40 CFR 60.334(b), 40 CFR 60.334(j), 40 CFR 60.334(j)(1), 40 CFR 60.334(j)(5), 40 CFR 60.335, and A.A.C. R18-2-901(40).

E. Sulfur Dioxide

1. Emission Limitations/Standards

The Permittee shall not burn in Gas Turbine Unit 1 or Gas Turbine Unit 2 any fuel that contains total sulfur in excess of 0.8 percent by weight (8000 ppmw).

[A.A.C. R18-2-901(40) {40 CFR 60.333(b)}]

2. Monitoring, Recordkeeping, and Reporting Requirements

a. The Permittee shall demonstrate that the gaseous fuel burned in Gas Turbine Unit 1 and Gas Turbine Unit 2 meets the definition of “natural gas” in 40 CFR 60.331(u). The Permittee shall use one of the following sources of information to make this demonstration: [A.A.C. R18-2-901(40) {40 CFR 60.334(h)(3)}]

(1) Maintain a current, valid purchase contract, tariff sheet, or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20 grains/100 scf or less, or

[A.A.C. R18-2-901(40) {40 CFR 60.334(h)(3)(i)}]

(2) Maintain a record of representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20 grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of 40 CFR 75 Appendix D is required.

[A.A.C. R18-2-901(40) {40 CFR 60.334(h)(3)(ii)}]

3. Permit Shield

[A.A.C. R18-2-325]

Compliance with the conditions of this Part shall be deemed compliance with 40 CFR 60.333(b), 40 CFR 60.334(h), and A.A.C. R18-2-904(40).

F. Carbon Monoxide

1. Emission Limitations/Standards

Total combined emissions of CO from Gas Turbine Unit 1 and Gas Turbine Unit 2 shall not exceed 244 tons per year, calculated daily as a rolling 365-day total.

[A.A.C. R18-2-306.01, -306.02.A, -331.A.3.a]

[Material permit conditions are indicated by underline and italics]

2. Monitoring, Recordkeeping, and Reporting Requirements

a. *The Permittee shall install, certify, maintain, operate and quality-assure Continuous Emission Monitoring Systems (CEMS) consisting of CO and O₂ (or CO₂) monitors for measuring CO emissions from Gas Turbine Unit 1 and Gas Turbine Unit 2.*

[A.A.C. R18-2-306.02.C, -306.A.3, -331.A.3.c]

[Material permit conditions are indicated by underline and italics]

b. The CO CEMS shall meet all applicable requirements of 40 CFR Part 60, including but not limited to the following: [A.A.C. R18-2-306.02.C, -306.A.3]

(1) 60.13 – Monitoring Requirements;

(2) Appendix B – Performance Specification 4A; and

(3) Appendix F – Quality Assurance Procedures.

- c. For demonstrating compliance with Condition III.F.1, the Permittee shall utilize the CO and diluent CEMS required by Condition III.F.2.a in conjunction with the fuel flow rate monitoring systems required by Condition III.D.3.h and a Data Acquisition and Handling System (DAHS) to calculate mass emissions in units of pounds per million Btu (lb/MMBtu), pounds per hour (lb/hr), pounds per day, and tons per daily rolling 365-day total from Gas Turbine Unit 1 and Gas Turbine Unit 2. [A.A.C. R18-2-306.02.C, -306.A.3]
- (1) To calculate mass emissions in lb/MMBtu, the Permittee shall use the Procedures for NO_x Emission Rate in 40 CFR 75 Appendix F. For CO, the value of K in Equations F-5 and F-6 = 7.266×10^{-8} (lb/dscf)/ppm CO.
- (2) The Permittee shall calculate mass emissions in lb/hr using the calculated lb/MMBtu rates, fuel flow monitoring data, and the GCV of the pipeline quality natural gas in accordance with the procedures for SO₂ emissions contained in 40 CFR 75 Appendix D.
- d. During CEMS or fuel flow rate monitoring system downtime, the Permittee shall implement the missing data procedures in 40 CFR Part 75 Subpart D, Appendix C, and Appendix D, as applicable. For CO monitoring data, the Permittee shall use the missing data estimation and substitution procedures prescribed for NO_x. [A.A.C. R18-2-306.02.C, -306.A.3]
- e. Each calendar day during which total combined rolling 365-day total CO emission rate from Gas Turbine Unit 1 and Gas Turbine Unit 2 exceeds 244 tons shall constitute an exceedance of Condition III.F.1. Exceedances shall be reported to the Director in accordance with Condition XII.A of Attachment “A”. [A.A.C. R18-2-306.02.C]
- f. Each individual day and 365-day rolling total CO emission rate in the reporting period shall be included in the semiannual compliance certification required by Condition VII of Attachment “A”. [A.A.C. R18-2-306.02.C, -306.A.5]

IV. COOLING TOWER

A. Applicability

This section applies to the Cooling Tower serving Gas Turbine Units 1 and 2.

B. Particulate Matter and Opacity

1. Emission Limitations/Standards

- a. The Permittee shall not emit or cause to be emitted into the atmosphere particulate matter in excess of the allowable hourly emission rate determined as follows:

- (1) Determination of the allowable emission rates (E) for process weight rates up to 60,000 lb/hr shall be accomplished by use of the equation:

[A.A.C. R18-2-730.A.1.a]

$$E = 4.10P^{0.67}$$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour; and

P = the process weight rate in tons-mass per hour.

- (2) Determination of the allowable emission rates (E) for process weight rates in excess of 60,000 lb/hr shall be accomplished by use of the equation: [A.A.C. R18-2-730.A.1.b]

$$E = 55.0P^{0.11} - 40$$

Where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour; and

P = the process weight rate in tons-mass per hour.

- b. The Permittee shall not cause, allow or permit to be emitted into the atmosphere any plume or effluent the opacity of which exceeds 20 percent, measured in accordance with Reference Method 9 in 40 CFR 60, Appendix A .

[A.A.C.R18-2-702.B.3]

- c. If the presence of uncombined water is the only reason for an exceedance of the applicable opacity requirement, the exceedance shall not constitute a violation of the applicable opacity limit.

[A.A.C.R18-2-702.C]

- d. Where a stack, vent, or other outlet is at such a level that fumes, gas mist, odor, smoke, vapor or any combination thereof constituting air pollution is discharged to adjoining property, the Director may require the installation of abatement equipment or the alteration of such stack, vent, or other outlet by the Permittee thereof to a degree that will adequately dilute, reduce, or eliminate the discharge of air pollution to adjoining property.

[A.A.C.R18-2-730.G]

2. Monitoring, Recordkeeping, and Reporting

[A.A.C.R18-2-306.A.3.c]

- a. A certified EPA Reference Method 9 observer shall conduct periodic visual surveys of visible emissions from the Cooling Tower. The initial visual survey shall be conducted within 30 days following startup of the Cooling Tower. Subsequent visual surveys shall be conducted no less frequently than once per calendar quarter.
- b. If visible emissions are detected during the visual survey, the observer shall conduct an EPA Reference Method 9 observation of emissions from the Cooling Tower.
- c. If the Method 9 observation results in an exceedance of the opacity limit contained in Condition IV.B.1.b, the Permittee shall take corrective action as necessary to reduce the opacity below the applicable limit. All exceedances shall be reported as excess emissions in accordance with Condition XII.A.1 of Attachment "A".

d. For each visual survey and Method 9 observation, the Permittee shall maintain a record of the following, as applicable:

- (1) The name of the observer;
- (2) The date and time of each visual survey and Method 9 observation;
- (3) The results of each visual survey and Method 9 observation; and
- (4) All corrective actions taken.

3. Permit Shield

[A.A.C.R18-2-325]

Compliance with the conditions of this Part shall be deemed compliance with A.A.C. R18-2-702.B, A.A.C. R18-2-702.C, A.A.C. R18-2-730.A.1, and A.A.C. R18-2-730.G.

V. EMERGENCY DIESEL GENERATOR

A. Applicability

This section applies to the Emergency Diesel Generator (black start generator) serving Gas Turbine Units 1 and 2.

B. NSPS Requirements

The Permittee shall comply with the requirements of 40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE) and 40 CFR 60 Subpart A as applicable to the Emergency Diesel Generator. Applicable requirements of 40 CFR 60 Subpart IIII includes, but is not limited to, the following:

1. Emission Standards for Emergency Engines

[40 CFR 60.4205(b)]

2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder must comply with the emission standards for new nonroad CI engines in 40 CFR 60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

2. Fuel Requirements

[40 CFR 60.4207]

a. Beginning October 1, 2007, the diesel fuel used in the Emergency Diesel Generator must meet the following requirements of 40 CFR 80.510(a):

- (1) Sulfur content: 500 parts per million (ppm) maximum; and
- (2) A minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.

b. Beginning October 1, 2010, the diesel fuel used in the Emergency Diesel Generator must meet the following requirements of 40 CFR 80.510(b):

- (1) Sulfur content: 15 ppm maximum; and
- (2) A minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.

3. Monitoring and Compliance Requirements [40 CFR 60.4209, 40 CFR 60.4211]

- a. The Permittee must install a non-resettable hour meter prior to startup of the Emergency Diesel Generator engine.
- b. The Permittee must operate and maintain the Emergency Diesel Generator engine and control device (if applicable) according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, the Permittee may only change those settings that are permitted by the manufacturer. The Permittee must also meet the requirements of 40 CFR Parts 89, 94, and/or 1068, as applicable.
- c. The Permittee must comply by purchasing an engine certified to the emission standards in 40 CFR 60.4205(b) for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.
- d. The Emergency Diesel Generator engine may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. Any operation other than emergency operation, and maintenance and testing as permitted in this section, is prohibited.

4. Permit Shield [A.A.C. R18-2-325]

Compliance with the conditions of this Part shall be deemed compliance with 40 CFR 60.4205(a), 60.4205(b), 60.4207, 60.4209, and 60.4211.

C. Other Operational Limitations

1. Fuel Limitation

The Permittee shall not cause or allow any fuel to be combusted in the Emergency Diesel Generator other than diesel fuel meeting the requirements of 40 CFR 60.4207.

[A.A.C. R18-2-306.01, -306.02.A, -331.A.3.a, 40 CFR 60.4207]
[Material permit conditions are indicated by underline and italics]

2. Hours of Operation Limitation

The Permittee shall not cause or allow the Emergency Diesel Generator to operate in excess of 500 hours per year.

[A.A.C. R18-2-306.01, -306.A.2, -331.A.3.a]
[Material permit conditions are indicated by underline and italics]

3. Monitoring, Recordkeeping, and Reporting [A.A.C. R18-2-306.A.3.c]

- a. The Permittee shall maintain records of the reason for operating the Emergency Diesel Generator and the hours of operation, including the date and startup and shutdown time in hours and minutes, on a 12-month rolling total.
- b. The Permittee shall maintain records of fuel supplier certifications that include the sulfur content of the fuel used in the Emergency Diesel Generator.

Compliance with the conditions of this Part shall be deemed compliance with 40 CFR 60.4207.

VI. FUGITIVE DUST REQUIREMENTS

A. Applicability

This Section applies to any source of fugitive dust at the facility.

B. Particulate Matter and Opacity

1. Open Areas, Roadways & Streets, Storage Piles, and Material Handling

a. Emission Limitations/Standards

- (1) Opacity of emissions from any fugitive dust source shall not be greater than 40% measured in accordance with the Arizona Testing Manual, Reference Method 9. [A.A.C. R18-2-614]
- (2) The Permittee shall not cause, allow or permit visible emissions from any point source, in excess of 20 percent opacity. [A.A.C-R18-2-702.B]
- (3) The Permittee shall employ the following reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne:
 - (a) Keep dust and other types of air contaminants to a minimum in an open area where construction operations, repair operations, demolition activities, clearing operations, leveling operations, or any earth moving or excavating activities are taking place, by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means; [A.A.C. R18-2-604.A]
 - (b) Keep dust to a minimum from driveways, parking areas, and vacant lots where motor vehicular activity occurs by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means; [A.A.C. R18-2-604.B]
 - (c) Keep dust and other particulates to a minimum by employing dust suppressants, temporary paving, detouring, wetting down or by other reasonable means when a roadway is repaired, constructed, or reconstructed; [A.A.C. R18-2-605.A]
 - (d) Take reasonable precautions, such as wetting, applying dust suppressants, or covering the load when transporting material likely to give rise to airborne dust; [A.A.C. R18-2-605.B]
 - (e) Take reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods

when crushing, handling, or conveying material likely to give rise to airborne dust; [A.A.C. R18-2-606]

- (f) Take reasonable precautions such as chemical stabilization, wetting, or covering when organic or inorganic dust producing material is being stacked, piled, or otherwise stored;

[A.A.C. R18-2-607.A]

- (g) Operate stacking and reclaiming machinery utilized at storage piles at all times with a minimum fall of material, or with the use of spray bars and wetting agents;

[A.A.C. R18-2-607.B]

- (h) Any other method as proposed by the Permittee and approved by the Director.

[A.A.C. R18-2-306.A.3.c]

b. Monitoring and Recordkeeping Requirement

- (1) The Permittee shall maintain records of the dates on which any of the activities listed in Conditions VI.B.1.a.(3)(a) through VI.B.1.a.(3)(h) above were performed and the control measures that were adopted.

[A.A.C. R18-2-306.A.3.c]

(2) Opacity Monitoring Requirements

- (a) A certified Method 9 observer shall conduct a quarterly visual survey of visible emissions from the fugitive dust sources. The Permittee shall keep a record of the name of the observer, the date and location on which the observation was made, and the results of the observation.

- (b) If the observer sees a visible emission from a fugitive dust source that on an instantaneous basis appears to exceed applicable opacity standard, then the observer shall, if practicable, take a six-minute Method 9 observation of the visible emission.

[A.A.C. R18-2-306.A.3.c]

- (i) If the six-minute opacity of the visible emission is less than or equal to applicable opacity standard, the observer shall make a record of the following:

- (a) Location, date, and time of the observation; and

- (b) The results of the Method 9 observation.

- (ii) If the six-minute opacity of the visible emission exceeds applicable opacity standard, then the Permittee shall do the following:

- (a) Adjust or repair the controls or equipment to reduce opacity to below the applicable standard; and

- (b) Report it as an excess emission under Section XII.A of Attachment "A".

- c. Permit Shield [A.A.C. R18-2-325]

Compliance with the conditions of this Part shall be deemed compliance with A.A.C. R18-2-604.A, A.A.C. R18-2-604.B, A.A.C. R18-2-605, A.A.C. R18-2-606, A.A.C. R18-2-607, and A.A.C. R18-2-612.

- 2. Open Burning

- a. Emission Limitation/Standard

Except as provided in A.A.C. R18-2-602.C.1, C.2, C.3, and C.4, and except when permitted to do so by either ADEQ or the local officer delegated the authority for issuance of open burning permits, the Permittee shall not conduct open burning.

[A.A.C. R18-2-602]

- a. Monitoring and Recordkeeping Requirement [A.A.C. R18-2-306.A.3.c]

Compliance with the requirements of Condition VI.B.2.a above may be demonstrated by maintaining copies of all open burning permits on file.

[A.A.C. R18-2-306.A.3.c]

- b. Permit Shield [A.A.C. R18-2-325]

Compliance with the conditions of this Part shall be deemed compliance with A.A.C. R18-2-602.

VII. MOBILE SOURCE REQUIREMENTS

A. Applicability

The requirements of this Section are applicable to mobile sources which either move while emitting air contaminants or are frequently moved during the course of their utilization but are not classified as motor vehicles, agricultural vehicles, or are agricultural equipment used in normal farm operations. Mobile sources shall not include portable sources as defined in A.A.C. R18-2-101.90.

[A.A.C.R18-2-801.A]

B. Particulate Matter and Opacity

- 1. Emission Limitations/Standards

- a. Off-Road Machinery

The Permittee shall not cause, allow, or permit to be emitted into the atmosphere from any off-road machinery, smoke for any period greater than ten consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes. Off-road machinery shall include trucks, graders, scrapers, rollers, and other construction and mining machinery not normally driven on a completed public roadway.

[A.A.C.R18-2-802.A and -802.B]

- b. Roadway and Site Cleaning Machinery

- (1) The Permittee shall not cause, allow or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or

dust for any period greater than ten consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes.

[A.A.C.R18-2-804.A]

- (2) The Permittee shall take reasonable precautions, such as the use of dust suppressants, before the cleaning of a site, roadway, or alley. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means. [A.A.C. R18-2-804.B]

- c. Unless otherwise specified, no mobile source shall emit smoke or dust the opacity of which exceeds 40%. [A.A.C.R18-2-801.B]

2. Recordkeeping Requirement

The Permittee shall keep a record of all emissions related maintenance activities performed on the Permittee's mobile sources stationed at the facility as per manufacturer's specifications. [A.A.C.R18-2-306.A.5.a]

3. Permit Shield [A.A.C.R18-2-325]

Compliance with this Section shall be deemed compliance with A.A.C. R18-2-801, A.A.C. R18-2-802.A, A.A.C. R18-2-804.A and A.A.C. R18-2-804.B.

VIII. OTHER PERIODIC ACTIVITY REQUIREMENTS

A. Abrasive Blasting

Particulate Matter and Opacity

1. Emission Limitations/Standards

- a. The Permittee shall not cause or allow sandblasting or other abrasive blasting without minimizing dust emissions to the atmosphere through the use of good modern practices. Good modern practices include: [A.A.C. R18-2-726]

- (1) wet blasting;
- (2) effective enclosures with necessary dust collecting equipment; or
- (3) any other method approved by the Director.

- b. Opacity

The Permittee shall not cause, allow or permit visible emissions from sandblasting or other abrasive blasting operations in excess of 20% opacity, as measured by EPA Reference Method 9. [A.A.C. R18-2-702.B]

2. Monitoring and Recordkeeping Requirement

Each time an abrasive blasting project is conducted, the Permittee shall log in ink or in an electronic format, a record of the following: [A.A.C. R18-2-306.A.3.c]

- a. The date the project was conducted;
 - b. The duration of the project; and
 - c. Type of control measures employed.
3. Permit Shield [A.A.C.R18-2-325]

Compliance with the conditions of this Part shall be deemed compliance with A.A.C. R18-2-726, A.A.C. R18-2-702.B.

B. Use of Paints

1. Volatile Organic Compounds
 - a. Emission Limitations/Standards

While performing spray painting operations, the Permittee shall comply with the following requirements:

- (1) The Permittee shall not conduct or cause to be conducted any spray painting operation without minimizing organic solvent emissions. Such operations, other than architectural coating and spot painting, shall be conducted in an enclosed area equipped with controls containing no less than 96 percent of the overspray. [A.A.C.R18-2-727.A]
- (2) The Permittee or their designated contractor shall not either:
 - (a) Employ, apply, evaporate, or dry any architectural coating containing photochemically reactive solvents for industrial or commercial purposes; or
 - (b) Thin or dilute any architectural coating with a photochemically reactive solvent. [A.A.C.R18-2-727.B]
- (3) For the purposes of Conditions VIII.B.1.a.(2) and VIII.B.1.a.(5), a photochemically reactive solvent shall be any solvent with an aggregate of more than 20 percent of its total volume composed of the chemical compounds classified in Conditions VIII.B.1.a.(3)(a) through VIII.B.1.a.(3)(c) below, or which exceeds any of the following percentage composition limitations, referred to the total volume of solvent:
 - (a) A combination of the following types of compounds having an olefinic or cyclo-olefinic type of unsaturation-hydrocarbons, alcohols, aldehydes, esters, ethers, or ketones: 5 percent.
 - (b) A combination of aromatic compounds with eight or more carbon atoms to the molecule except ethylbenzene: 8 percent.
 - (c) A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene: 20 percent. [A.A.C.R18-2-727.C]

(4) Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the groups of organic compounds described in Conditions VIII.B.1.a.(3)(a) through VIII.B.1.a.(3)(c) above, it shall be considered to be a member of the group having the least allowable percent of the total volume of solvents. [A.A.C.R18-2-727.D]

(5) The Permittee shall not dispose of by evaporation more than 1.5 gallons of photochemically reactive solvent in any one day. [SIP Provision R9-3-527.C]

b. Monitoring and Recordkeeping Requirements

(1) Each time a spray painting project is conducted, the Permittee shall log in ink, or in an electronic format, a record of the following:

(a) The date the project was conducted;

(b) The duration of the project;

(c) Type of control measures employed;

(d) Material Safety Data Sheets for all paints and solvents used in the project; and

(e) The amount of paint consumed during the project.

(2) Architectural coating and spot painting projects shall be exempt from the recordkeeping requirements of Condition VIII.B.1.b.(1) above. [A.A.C. R18-2-306.A.3.c]

c. Permit Shield [A.A.C.R18-2-325]

Compliance with this Part shall be deemed compliance with A.A.C.R18-2-727 and SIP Provision R9-3-527.C.

2. Opacity

a. Emission Limitation/Standard

The Permittee shall not cause, allow or permit visible emissions from painting operations in excess of 20% opacity, as measured by EPA Reference Method 9. [A.A.C. R18-2-702.B]

b. Permit Shield [A.A.C.R18-2-325]

Compliance with the conditions of this Part shall be deemed compliance with A.A.C.R18-2-702.B.

C. Demolition/Renovation - Hazardous Air Pollutants

1. Emission Limitation/Standard

The Permittee shall comply with all of the requirements of 40 CFR 61 Subpart M (National Emissions Standards for Hazardous Air Pollutants - Asbestos).

[A.A.C. R18-2-1101.A.8]

2. Monitoring and Recordkeeping Requirement

The Permittee shall keep all required records in a file. The required records shall include the “NESHAP Notification for Renovation and Demolition Activities” form and all supporting documents.

[A.A.C. R18-2-306.A.3.c]

3. Permit Shield

[A.A.C.R18-2-325]

Compliance with the conditions of this Part shall be deemed compliance with A.A.C. R18-2-1101.A.8.

ATTACHMENT “C”: EQUIPMENT LIST

**Air Quality Control Permit No. 42864
for
Unisource Energy Development Company – Black Mountain Generating Station**

NAME	MAKE	MODEL	CAPACITY	EQUIPMENT NUMBER	YEAR OF INSTALLATION	NSPS APPLICABLE
Combustion Gas Turbine Unit 1	General Electric	LM6000PC-Sprint	48 MW Continuous Maximum Rating	Unit 1 / 191-452	TBD	Yes
Combustion Gas Turbine Unit 2	General Electric	LM6000PC-Sprint	48 MW Continuous Maximum Rating	Unit 2/ 191-454	TBD	Yes
Emergency Diesel Generator	Caterpillar	C18 or equivalent	600 KW Continuous Maximum Rating	EGEN1/TBD	2007 OR LATER	Yes
Cooling Tower for Unit 1 and Unit 2	Evapco	AT-312-954 or equivalent	4,231 gpm Recirculation Rate	CT1	TBD	No

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ATTACHMENT “D”: PHASE II ACID RAIN PROVISIONS

Air Quality Control Permit No. 42864 for Unisource Energy Development Company – Black Mountain Generating Station

I. Statement of Basis

Statutory and Regulatory Authorities: In accordance with Arizona Revised Statutes, Title 49, Chapter 3, Article 2, Section 426.N, and Titles IV and V of the Clean Air Act, the Arizona Department of Environmental Quality issues this Phase II Acid Rain Permit pursuant to Arizona Administrative Code, Title 18, Chapter 2, Article 3, Section 333 (A.A.C. R18-2-333), “Acid Rain.”

II. SO₂ Allowance* Allocations and NO_x Requirements for each Affected Unit

- A. The Permittee shall comply with the Acid Rain Permit and 40 CFR Parts 72, 73, and 75.
- B. The Permittee shall hold SO₂ allowances as of the allowance transfer deadline in each Gas Turbine Unit compliance sub-account not less than the total annual actual emissions of SO₂ from each gas turbine unit for the previous calendar year as required by the Acid Rain Program.
- C. The SO₂ Allowance Requirements and NO_x requirements for Gas Turbine Unit 1 and Gas Turbine Unit 2 are as follows:

Gas Turbine Unit 1

Year:	2005-2009	2010 -
Annual SO ₂ allowances	NA	NA
NO _x Limits:	This Unit is not subject to a NO _x limit under 40 CFR Part 76.	

Gas Turbine Unit 2

Year:	2005-2009	2010 -
Annual SO ₂ allowances	NA	NA
NO _x Limits:	This Unit is not subject to a NO _x limit under 40 CFR Part 76.	

* As defined under 40 CFR §72.2, “Allowance” means an authorization by the Administrator under the Acid Rain Program to emit up to one ton of sulfur dioxide during or after a specified calendar year.

III. Permit Application

The Permittee, and any other owners or operators of the affected units at this facility, shall comply with the requirements contained in the Acid Rain Permit Application signed by the Designated Representative on December 20, 2006.